

As a member of the committee of revision of the Pharmacopoeia of the United States, he certainly speaks with great authority. Large sections of the book are taken up with histological studies and from this standpoint, it must have a wide reading.

The enormous amount of information in the book and a splendidly prepared index will undoubtedly make its range of usefulness very great. That it will successfully cater to quite all the readers to whom it is addressed, some will doubt.

N. T.

Bessey's Essentials of College Botany*

Bessey's Essentials of Botany has been "entirely rewritten" by Professor Charles E. Bessey and his son, Professor Ernst A. Bessey, and now appears as Essentials of College Botany.

The range of subject matter is a wide one. The first five chapters deal mainly with histology and physiology; chapter five contains an interesting list of chemical substances—their formulas and something of their distribution in plants. The remaining seventeen chapters deal with the main plant divisions and their representatives.

The laboratory work is arranged to allow for choice as to the parts selected for use. It would seem as if the amount were not too great for one year's work by college students. In some cases, at least, a more critical type of work might be demanded of college students (*e. g.*, the *unsealed* apparatus in the CO₂ experiment on page 102). The present reviewer does not agree with the authors in preferring diagrams rather than detailed drawings, photographs, etc.; the type of labels or legends used do not sufficiently compensate for the character of the illustrations used; pages 72, 107, 230, and 256 furnish examples of illustrations that would mean little even to a college student.

JEAN BROADHURST

TEACHERS COLLEGE

PROCEEDINGS OF THE CLUB

JANUARY 12, 1915.

The annual meeting of the Club was held January 12, 1915, in the American Museum of Natural History at 8:15 P.M. President Harper presided. Ten persons were present.

* Holt & Co., N. Y. 1914.

The minutes of November 25, December 8, and December 21, 1914, were read and approved.

Dr. M. Levine proposed the names of Mr. Theodore Muller, N. Y. City, and Mr. Jesse Pasternak, Commerical High School, Brooklyn, and the secretary proposed Mr. W. E. Jenkins, librarian of the University of Indiana, Bloomington, Ind., for membership.

Dr. J. H. Barnhart reported on the work of the finance committee and Dr. M. A. Howe reported that the budget committee had considered the special question of accepting for publication as Part III of Vol. 14, of the Memoirs, a paper submitted by Dr. F. L. Pickett. It was the sense of the Committee that it was desirable to complete Vol. 14 and that this paper should be accepted for publication under the conditions which were being arranged with Dr. Pickett.

Reports of the chairman of the sub-committees on local flora were then called for by the president. Dr. T. E. Hazen reported on the work being done on the freshwater algae and referred especially to a form of *Stigeoclonium* which had been found at West Farms. This was followed by a report from Dr. M. A. Howe on the marine algae, who spoke of a recent article published in *TORREYA* on the local marine algae. Professor R. A. Harper presented a list of the species of *Cortinari* found in this district and exhibited numerous photographs of species representing most of the forms mentioned.

Dr. M. Levine spoke of the lively interest being aroused in the collection and identification of the species of the Polyporaceae and Dr. B. O. Dodge remarked on the collection of certain species of Discomycetes.

The following resignations were accepted: Miss Elizabeth Schettler, H. R. Bishop, Luther Livingston, and Dr. Z. L. Leonard.

Reports of the officers for the year were next in order:

President Harper spoke of various ways in which further interest might be aroused in the Club through the work on the local Cryptogamic flora and Vice-President Barnhart followed with a report on the duties performed by the vice-president.

The secretary's report stated that there had been an increase of 243 persons in the attendance at the meetings held during the year and that 18 new members had been elected and 9 resignations accepted. The report of the treasurer was read and referred to the auditing committee.

Dr. M. A. Howe, reporting for the editors, presented an informal report.

The election of officers resulted as follows: *President*, R. A. Harper; *Vice-Presidents*, J. H. Barnhart, H. M. Richards; *Secretary-Treasurer*, B. O. Dodge; *Editor*, A. W. Evans; *Associate Editors*, Jean Broadhurst, J. A. Harris, M. A. Howe, H. M. Richards, A. B. Stout, N. Taylor, W. Marquette; *Delegate to the Council of the Academy of Sciences*, J. H. Barnhart.

Adjournment followed.

B. O. DODGE, *Sec.*

JANUARY 27, 1915

The meeting of January 27, 1915, was held in the morphological laboratory of the New York Botanical Garden at 3:30 P.M., President Harper presiding. Twenty-three persons were present.

The minutes of the annual meeting of January 12 were read and approved.

Mr. William Clay Barbour, 149 Newark Avenue, Bloomfield, N. J., was nominated for membership.

Mrs. E. G. Britton, chairman of the special committee on mosses reported that additional specimens of mosses from this region were being arranged in the display cases at the New York Botanical Garden.

The application of Mr. Norman Taylor for a grant of \$200 from the Esther Herrman Fund of the N. Y. Academy of Sciences to aid him in continuing a phytogeographical and ecological survey of the flora of Long Island was endorsed by unanimous vote of the Club. Mr. Taylor brought before the Club the question of accepting a paper for publication in *TORREYA* by Dr. H. A. Gleason describing his trip around the world. The question was referred to the board of editors for consideration.

Messrs. Jesse Pasternak, Theodore Muller, W. E. Jenkins and William Clay Barbour were then elected to membership. The resignation of Mrs. M. M. Le Brun was accepted.

Dr. F. D. Fromme presented the first paper on the announced scientific program on "Methods of Predicting Probable Life Histories of Rust Species."

The following abstract was prepared by the speaker:

"The possession of more than one spore form in the life-cycles of most rust species together with the heteroecious habit of a large number of them makes the working out of their life histories a difficult problem. This is especially true of the heteroecious rusts, as cultures are in all cases necessary to the establishment of the specific identity of an aecial and telial stage on different hosts. While the technique necessary to secure infection is in itself simple the knowledge of the proper trial host to use is hard to obtain. Field studies on the association of hosts have been the most fruitful source of information but such studies, owing to the geographical location of many unconnected forms, often require a greater outlay of time and money than is available. The study of the morphological peculiarities of different spore forms has been of great assistance as an indication of probable relationships. Certain structural parallelisms often exist between the spore forms found on the two alternate hosts of a heteroecious species; others are found between species of *Uromyces* and *Puccinia*; and between the teliospores of long-cycle and short-cycle forms."

Following a discussion of this paper, Dr. J. C. Arthur spoke on "The Species Question among the Rusts."

Prof. Arthur furnished the following abstract: "The history of the application of names to the rusts was traced from the establishment of the genus *Puccinia* for a cedar rust by the pre-Linnaean botanist Micheli to the present time. The short-cycled forms, like *Puccinia Xanthii*, having only one spore-form, have never presented special difficulties. When DeBary in 1865 compelled attention to heteroecism in the long-cycle forms confusion and uncertainty began in the application of names, both as to genera and species. It has been, and is still largely customary to refer aecial forms having the telia unknown to form-genera, rather than to the true genus, even in cases where there is no question of relationship. The first systematist to break

away from the old method was Kern in his monograph of *Gymnosporangium* in 1911. With Klebahn's culture work the confusion of so-called physiological or biological species was made prominent, in which the specialization of the rust goes with the dissimilarity of the hosts. This was illustrated by the *Aster-Solidago-Erigeron-Carex* complex, going under many names but doubtless a single specialized species. The geographical specialization of a species was illustrated by *Puccinia subnitens* with aecia on *Sarcobatus*, *Chenopodium* and various crucifers. A morphological specialization explains the application of the names *Uromyces Spartinae* and *U. acuminatus* to the same species of rust. The rule to be adopted in defining species seems to require dependable morphological characters and a uniform life-cycle.

However, Tranzschel has pointed out a troublesome, and yet unexplained parallelism, in which the telia of a short-cycled species resemble morphologically those of a long-cycled species, the host of the short-cycled form being identical with the aecial host of the long-cycled form. It is yet uncertain whether such parallel species should be considered independent species, possibly belonging to two genera, or two forms under one species. Other equally disturbing problems in the limitation of both species and genera were mentioned and their relation to the species question in general indicated.

Dr. Britton and Professor Harper led the discussion which followed.

Meeting adjourned.

B. O. DODGE, *Secretary*

NEWS ITEMS

At a recent meeting of the board of managers of the New York Botanical Garden, Dr. N. L. Britton, the director, reported the transfer by the City of New York of additional land in Bronx Park, to the New York Botanical Garden. The newly acquired area contains a large tract of forest, the old Lorillard mansion, and consists of about 150 acres, making the whole area of the Garden nearly 400 acres.

Professor Duncan S. Johnson, of Johns Hopkins University, has been given leave of absence for the spring term. He will